



# Status of Power Plants & Electricity Generation

**Stationary Source Committee Meeting  
September 21, 2012**

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Deputy Executive Officer  
South Coast Air Quality Management District



# New Power Plants Permitted (since 2000)

Facility	Location	MW	Start-up Date
Canyon Power Plant*	Anaheim	204	2011
Riverside DWP*	Riverside	242	2001- 2009
PurEnergy (2 Projects)**	Colton	84	2001
SCEdison (4 Projects)**	Miraloma, Ontario, Norwalk, Stanton	188	2007
CPV Sentinel <sup>+</sup>	Desert Hot Springs	824	2013
El Colton <sup>+</sup>	Colton	48	2003
Inland Empire Energy Center <sup>+</sup>	Menifee	810	2008
Magnolia Power <sup>+</sup>	Burbank	328	2005
THUMS <sup>+</sup>	Long Beach	45	2005
Walnut Creek Energy <sup>+</sup>	City of Industry	500	2012
Wildflower Energy <sup>+</sup>	North Palm Springs	135	2001
Total		3408	

\* ERCs

\*\* Exempt < 4 TPY

<sup>+</sup> District Internal Bank/ Other

# Existing Repowers/ Addition (since 2000)

Facility	Location	MW Added	MW Removed
AES Huntington Beach*	Huntington Beach	450	0
Edison MtView*	San Bernardino	1056	0
NRG Long Beach*	Long Beach	260	577
Bicent Malburg <sup>+</sup>	Vernon	143	0
Burbank DWP <sup>+</sup>	Burbank	46	48
Glendale DWP <sup>+</sup>	Glendale	50	53
LADWP Haynes <sup>+</sup>	Long Beach	1206	1188
LADWP Harbor <sup>+</sup>	Wilmington	237	0
LADWP Valley <sup>+</sup>	Sun Valley	627	546
NRG El Segundo <sup>+</sup>	El Segundo	572	685
Pasadena DWP <sup>+</sup>	Pasadena	95	90
Total		4742	3187

\* ERCs

<sup>+</sup> District Internal Bank/ Other



# Power Plants Shutdowns (since 2000)

Facility	MW Shut down	MW Replaced
AES Alamitos*	133	0
AES Huntington Beach*	133	0
AES Riverside Canal <sup>+</sup>	154	0
Edison MtView <sup>+</sup>	126	0
GenOn West Etiwanda* <sup>+</sup>	390	0
AES Redondo <sup>+</sup>	655	509
NRG El Segundo <sup>+</sup>	685	572
NRG Long Beach*	577	260
EME Huntington Beach <sup>+</sup>	450	500
Pasadena DWP <sup>+</sup>	90	95
Burbank DWP* <sup>+</sup>	127	46
Glendale DWP*	53	50
LADWP Valley <sup>+</sup>	546	580
LADWP Harbor*	42	42
LADWP Haynes <sup>+</sup>	1188	1206
LADWP Scattergood <sup>+</sup>	590	590
Total	5939	4450

\* Peaking Turbines

+ Utility Boilers

# Once-Through-Cooling Generating Units (7,646 MWs)



Operator	Facility	Units	Total MW	OTC Replacement Date
AES	Alamitos	Boilers 1-6	1950	2020
AES	Huntington Beach	Boilers 1-4	880	2020
AES	Redondo Beach	Boilers 5-8	1310	2020
NRG	El Segundo	Boilers 3-4	670	2015
LADWP	Haynes	Boilers 1,2,5,6 Turbines 9,10	1654	2029
LADWP	Harbor	Turbines 1,2	364	2029
LADWP	Scattergood	Boilers 1-3	818	2024
Total			7646	

# Power Plant Applications Pending

Facility	Type	MW
Palen Solar 1 LLC	Solar Thermal	500
LADWP Scattergood Repower (2 options)	Turbines	524-590
AES Huntington Beach Repower	Turbines	939
Pasadena DWP Repower (2 options)	Turbines	71

# Powerplants in AQMD





# NRG El Segundo





# NRG El Segundo Repower

**NRG El Segundo: 2 boilers, total of 670 MW.**

- **2000 Proposal**

- Repower of Boilers 1 and 2 (350 MWs) with 647 MW.
- Offsets: R-1304, ERCs, and R1309.1 Priority Reserve.
- CEC approves AFC in Feb 2005, but lawsuits filed.

- **2007 Proposal**

- Modification: capacity reduced to 573 MW.
- OTC is removed and replaced with dry cooling.
- Offsets: R-1304. Total MW shutdown is 685 MW.
- AQMD Permits issued on July 16, 2010.
- Start of operation in August 2013

# NRG El Segundo



Before



After



# NRG El Segundo – Future Plans

- Boiler Units 1 and 2 already shutdown
- Boiler Units 3 and 4 still operating
- Repower project to start operation in August 2013
- Boiler Unit 3 to be shutdown with start of new repower project operation.
- Boiler Unit 4 maybe replaced with new GTs to meet 2015 OTC requirement



# LADWP Scattergood



# City of Los Angeles Scattergood/Hyperion



**LADWP Scattergood: 3 boilers total of 830 MW. The facility uses digester gas from Hyperion and natural gas.**

- LADWP has proposed 2 options to repower Boiler 3 (460 MW) and derate Boiler 1 (64–130 MW).
- Option 1 is 524 MW.
- Option 2 is 590 MW

Future Plan: LADWP may repower remaining OTC Units by 2024

## **Hyperion Sewage Treatment Plant**

- Beginning January 2015, digester gas will no longer be sent to LADWP Scattergood
- Hyperion has proposed 2 options to burn digester gas.
- Option 1: install turbines to burn digester gas, 39 MW
- Option 2: produce pipeline quality bio-methane (PQM) from digester gas. PQM will be sold or burned in new boiler.



# LADWP Scattergood



Before



After





# CPV Sentinel



# Competative Power Ventures (CPV) Sentinel



**CPV Sentinel: Under Construction, 8 turbines, total of 850 MW.**

- CPV files applications with CEC/AQMD in 2007
- Offsets: ERCs and R1309.1 Priority Reserve.
- January 2010: Pursuant to AB1318, CPV to obtain offsets for PM10 and SOX from AQMD's internal offset bank
- CEC approves AFC in December 2010
- EPA Region 9 approves SIP Revisions in April 2011.
- AQMD Permits issued on April 15, 2011
- Start of operation in August 2013



# Walnut Creek





# Edison Mission Energy (EME) Walnut Creek Energy



## **EME Walnut Creek Energy: Under Construction, 5 turbines, total of 500 MW.**

- EME files applications with CEC/AQMD in 2005
- Offsets: ERCs and R1309.1 Priority Reserve.
- CEC approves license in February 2008.
- May 2011: EME purchased from AES Boilers 3 and 4 at Huntington Beach.
- EME will retire HB boilers 3 and 4 as offsets prior to operation of EME Walnut Creek
- AQMD permit issued on May 2011
- Start of operation in November 2012



# Shutdown of Huntington Beach Units 3 & 4



- March 2011 – CAISO determines replacement of HB Units 3 & 4 with WCEP will not create any reliability issues
- April 2011 – AES & EME notify PUC of shutdown date of Nov. 1, 2012
- May 2011 – PUC approves
- Sept. 2011 – AES & EME notify PUC of accelerated shutdown of Dec. 2011
- Dec. 2011 – CAISO approves removal, HB Units 3 & 4 no longer needed
- Jan. 2012 – PUC approves shutdown of HB Units 3 & 4 as of Jan. 12, 2012
- AES & EME initiate permanent shutdown of HB Units 3 & 4





# Main Gas Supply Line to HB Units 3 & 4 Cut / Double Flanged





# Cut a 3'X4' Section of Boiler Walls on Both Ends





# San Onofre Nuclear Generating Stations (SONGS) Shutdown



- In January 2012, SCE found small leak of radioactive steam in SONGS Unit 3
- SONGS Unit 2 already offline for plant maintenance
- Total of 2,200 MWs lost - enough for 1.4 million homes.
- CAISO projected electricity shortfalls in San Diego, So. Orange and parts of LA Counties, during hot weather



# Restart of Huntington Beach Units 3 & 4



- In March 2012, CAISO requested that HB Units 3 & 4 be brought back online to avoid blackouts in San Diego and So. Orange Counties in hot weather while SONGS is shutdown





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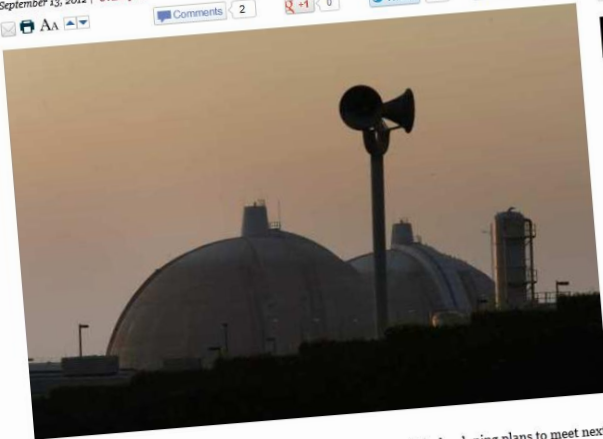
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## Plans being drawn up for another summer without San Onofre

September 13, 2012 | 6:22 pm



The organization responsible for overseeing California's power grid is developing plans to meet next summer's electricity needs in Southern California if the San Onofre nuclear plant remains offline. The plant's outage has already stretched for more than seven months, forcing energy officials to replace its 2200 megawatts of power -- enough to power about 1.4 million homes -- in the heat of the summer.

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Published: Sept. 13, 2012 Updated: Sept. 14, 2012 9:47 p.m.

## NRC: San Onofre staying offline for 'months'

The San Onofre nuclear plant will not be restarting anytime soon, the chairwoman of the Nuclear Regulatory Commission assured a U.S. Senate committee this week, although a repair plan for the plant's troubled steam generators could be completed early next month.



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By PAT BRENNAN / ORANGE COUNTY REGISTER

The San Onofre nuclear plant will not be restarting anytime soon, the chairwoman of the Nuclear Regulatory Commission assured a U.S. Senate committee this week, although a repair plan for the plant's troubled steam generators could be completed early next month.

Under questioning from Sen. Barbara Boxer, D-Calif., who chairs the Committee on Environment and Public Works, NRC Chairwoman Allison Macfarlane said Wednesday that it would be "months" before a repair plan is cleared for San Onofre.

The plant operator, Southern California Edison, must have any restart plans approved by the NRC. And the NRC is still studying whether

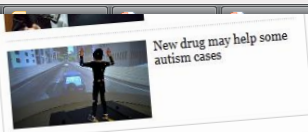
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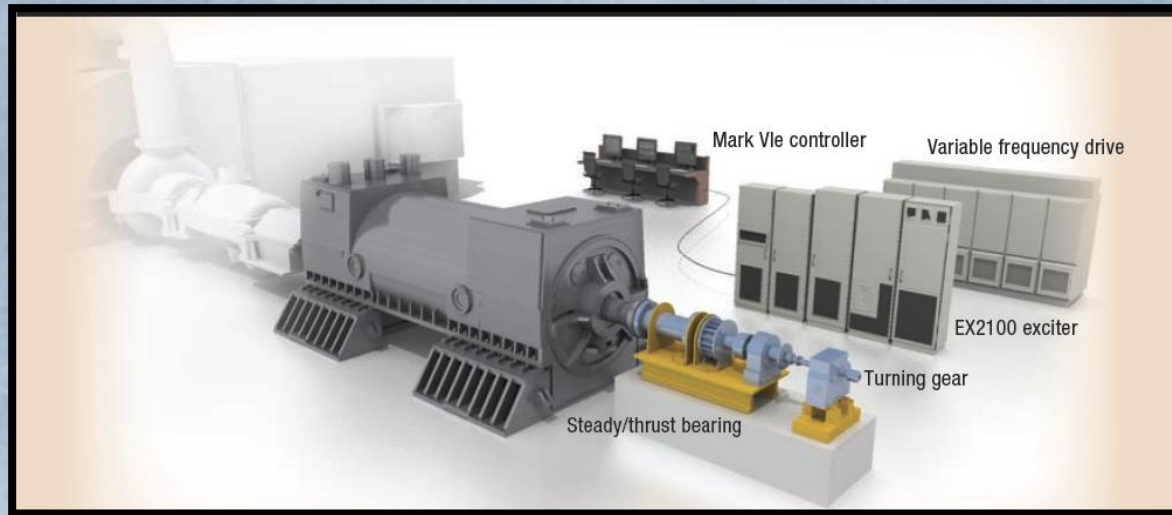


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# Converting Existing Synchronous Generators into Synchronous Condensers at Huntington Beach



- July 2012 EME/AES presented CEC discussion to convert the synchronous generators at Huntington Beach units 3 and 4 into synchronous condensers.
- Operation of synchronous condensers will increase grid reliability.
- Increased grid reliability is of current concern due to the non-operational status of SONGS.



# San Onofre Nuclear Generating Station News



September 20, 2012  
HUFF POST LOS ANGELES  
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## San Onofre Power Plant Layoffs: Troubled Utility To Let 730 Employees Go

Reuters | Posted: 08/21/2012 8:12 am

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## San Onofre Power Plant To Empty Radioactive Fuel From One Reactor

By MICHAEL R. BLOOD 08/27/12 07:17 PM ET **AP**

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SAN CLEMENTE, Calif. -- The operator of the San Onofre nuclear power plant is preparing to empty the radioactive fuel from one of its twin reactors, a federal official said Monday, another sign the plant won't be operating at full capacity anytime soon, if



# Walnut Creek



Before



After



# AES Huntington Beach/ Repower Project





# AES Huntington Beach Energy Project

## AES Huntington Beach: Boilers 1 & 2, total of 430 MW

- Applications filed with CEC/AQMD in June 2012
- AES to replace Boilers 1 and 2 with combined-cycle turbines, 939 MW
- Offsets: R1304(a)(2): Retirement of AES Huntington Beach boilers 1 & 2 and AES Redondo boilers 6 & 8, Total: 1,085 MW
- Construction to begin in 2015.
- Start of operation in 2020



# AES Huntington Beach

Before



After



Planned Start date: November 9, 2012



# Location Matters - Walnut Creek, HB, Redondo Beach, El Segundo and San Onofre

